terpretation may be given to each of the constituent parts, riveting the expression of the root in the memory, and converting the solution of a problem into a condensed enunciation of various theorems. The author exhibits the application of these principles to equations of various degrees, beginning with quadratic and cubic, and proceeding to those involving higher powers.

"On the first changes in the Ova of the Mammifera, in consequence of Impregnation; and of the mode of origin of the Chorion." By Thomas Wharton Jones, Esq. Communicated by Richard Owen, Esq., F.R.S.

The author having, in a former paper, described the structure of the unimpregnated ovum of mammiferous animals, now proceeds to investigate the changes which the ovum undergoes in consequence of impregnation. In the rabbit, the first perceptible difference is the addition of a thick gelatinous matter surrounding the parts of which the ovum was composed in its original state, and apparently derived from the ovaries. In the progress of development the vitellary membrane gives way, as happens in the ova of the newt, and of many of the oviparous animals. The gelatinous envelope acquired in the ovary, and which is more especially circumscribed and defined after impregnation, constitutes the only covering of the vascular blastoderma, after the giving way of the vitellary membrane, and afterwards forms the chorion, which in rodent animals, at a further stage of development, presents itself under the form of a thin and transparent membrane, very similar to the vitellary membrane of a bird's egg, and situated immediately outside the non-vascular and reflected layer of the umbilical or erythroid vesicle. The author draws similar conclusions with regard to the developement of the human ovum.

The second part of the paper relates to the changes taking place in the vitellus, the inferences concerning which are deduced chiefly from observations of the developement of the ova of batrachian reptiles. The author concludes that the disappearance of the germinal vesicle is prior to impregnation. In the newt, the vesicle, at first imbedded in the substance of the yelk, gradually approaches the surface, until its situation is immediately underneath the vitellary membrane: its coat, having now become very soft, gives way, allowing the contained fluid to be effused on the surrounding surface of the yelk; and the small depression in which the vesicle was lodged now forms the cicatricula. The effused fluid gives a degree of consistence to the matter composing the surface of the yelk, and thus promotes the formation of the blastoderma. In the frog, the surface of the yelk becomes every day more and more broken up, and the resulting crystalline forms described by Prevost and Dumas become smaller and smaller, until the surface of the black blastoderma appears under a magnifying glass like shagreen. The blastoderma, consisting of an aggregation of clear globules, different from those of the rest of the yelk, is now fully formed, and has extended itself so as to close in the white spot. The change which takes place in the yelk of the bird's egg appears to be limited to the neighbourhood of the cicatricula.